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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/665,469 | 09/22/2003 | Toshikazu Onishi | 60188-660 | 5515 |

7590 09/26/2006

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Washington, DC 20005-3096

EXAMINER

NGUYEN, PHILLIP

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2828

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,469

Applicant(s)

ONISHI, TOSHIKAZU

Examiner

Phillip Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,8 and 16 is/are allowed.
- 6) ☒ Claim(s) 1,5,6,9-12 and 15 is/are rejected.
- 7) ☒ Claim(s) 4 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/13/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 5-6, 9-12, and 15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

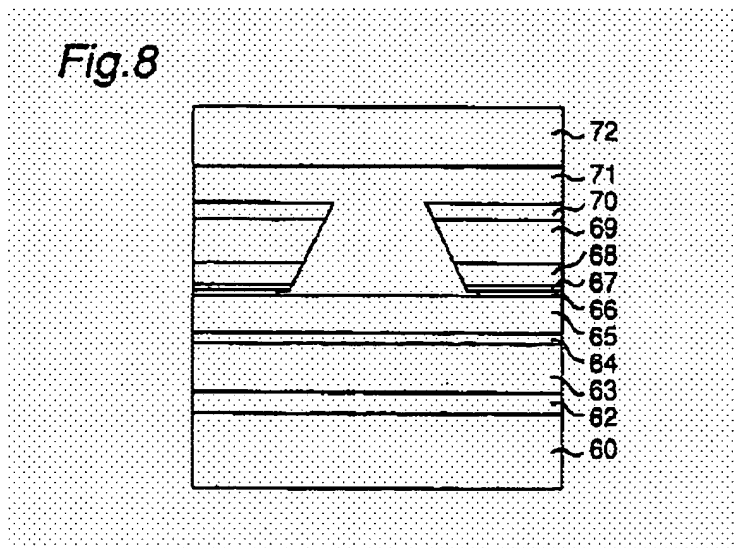
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5, and 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohitsu et al. (US Patent No. 6940884).



With respect to claims 1, 5, and 12, Ohitsu discloses in Fig. 8 (above) a semiconductor laser device comprising an active layer 64; a first cladding layer 65 formed on the main surface of the active layer (upper surface of the active layer 64) with a first impurity (Carbon) to have a dopant concentration higher than $5 \times 10^{17} \text{ cm}^{-3}$ (in this case, Ohitsu discloses the concentration of the first cladding layer 65 is $1 \times 10^{18} \text{ cm}^{-3}$ when Mg is used as dopant of second cladding and $7 \times 10^{17} \text{ cm}^{-3}$ if Zn is used as a dopant of second cladding layer 71, see col. 9, lines 13-43), and a second cladding layer 71 formed on a portion of a main surface of the first cladding (the middle portion of the upper surface of the cladding layer 65), the second cladding layer being doped with a second impurity (Mg) different than the first impurity (Mg is different from C), wherein the first cladding layer has the same conductivity type as that of the second cladding layer (both cladding layers are p type). It is noted that Magnesium and Zinc have higher electrical and thermal conductivity than Carbon. Furthermore, the dopant concentration of the first cladding is lower than that of the second cladding which is $2 \times 10^{18} \text{ cm}^{-3}$ (col. 8, lines 59-62). Therefore, the first cladding layer has a resistivity higher than that of the second cladding.

Art Unit: 2828

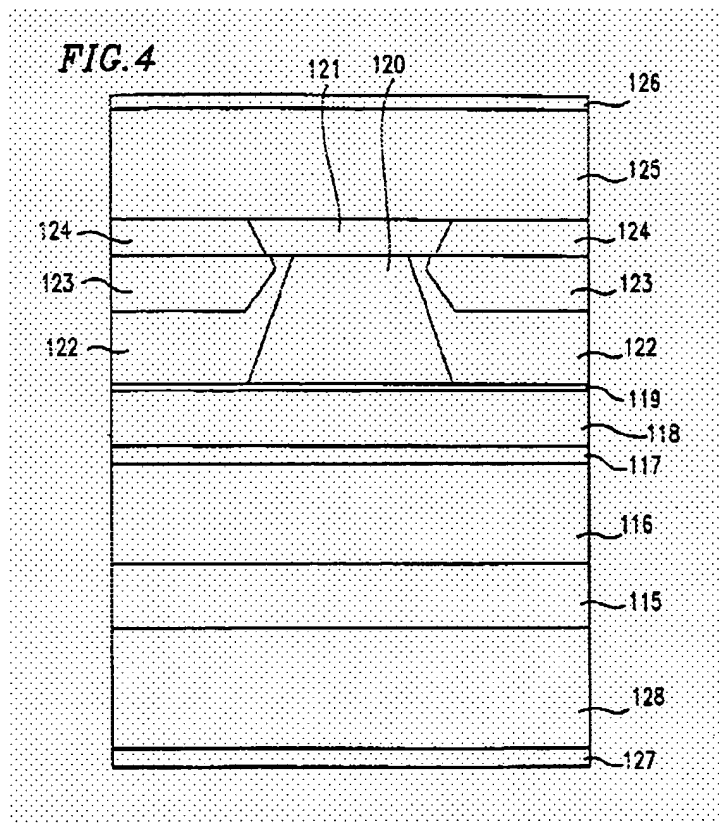
With respect to claim 9, Ohitsu discloses the first and second cladding layers being made of a compound semiconductor containing arsenic (AlGaAs), the first impurity is carbon (C), and the second impurity is zinc (Zn). See col. 9, lines 13-43.

With respect to claims 10-11, Ohitsu discloses the second cladding layer 71 being formed into a ridge-shaped configuration on the first cladding and the second cladding having a lower portion thereof formed into a stripe configuration (see the Fig. 8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohitsu et al. (US Patent No. 6940884) in view of Okubo et al. (US Patent No. 6181723). Ohitsu discloses the claimed invention except for the first cladding layer further comprising a third impurity. Okubo discloses a laser in Fig. 4 comprising an active layer 117, a first cladding layer 118 formed on the active layer, and a second cladding layer 120 formed on the first cladding layer wherein the first cladding layer has a first impurity with a dopant concentration higher than $5 \times 10^{17} \text{ cm}^{-3}$, and the second cladding layer having a second impurity, wherein both first and second cladding layers are the same conductive type (p). It would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide a third impurity as taught by Okubo to the first cladding layer in order to control the diffusion (col. 9, lines 23-29).

Allowable Subject Matter

4. Claims 4 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7-8 and 16 are allowed.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2828

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Communication Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

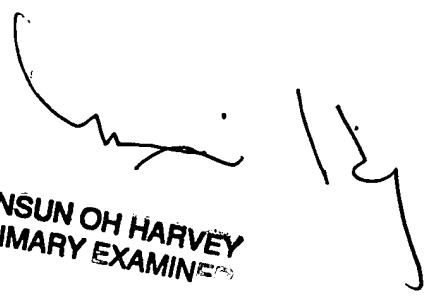
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Art Unit: 2828

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINEE